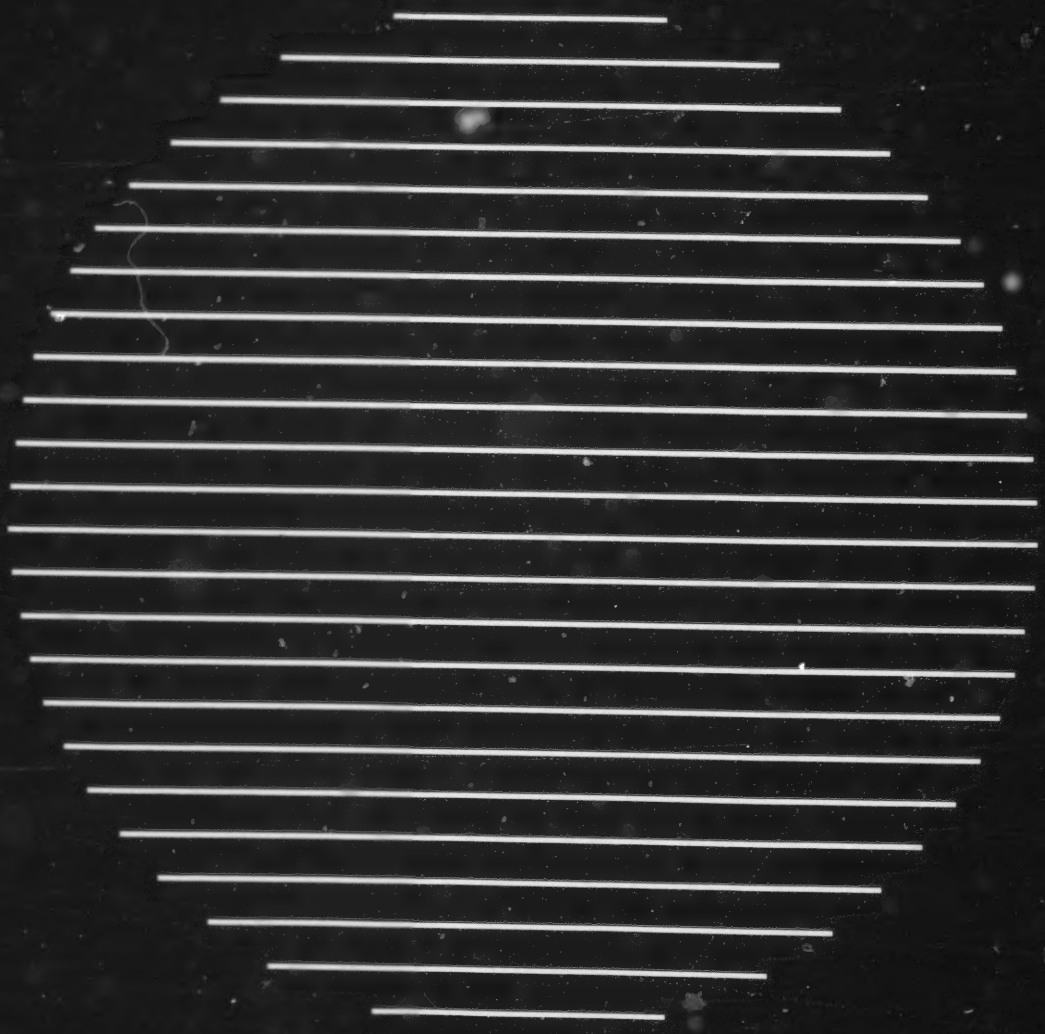
Telecommunications



Alberta

TECHNOLOGY, RESEARCH
AND TELECOMMUNICATIONS

A Message from the Minister

■ Telecommunications plays a vital and ever expanding role in all aspects of today's complex society. The increasing demand for the efficient exchange of ideas and information requires innovative, reliable and competitive advanced communications products and services.

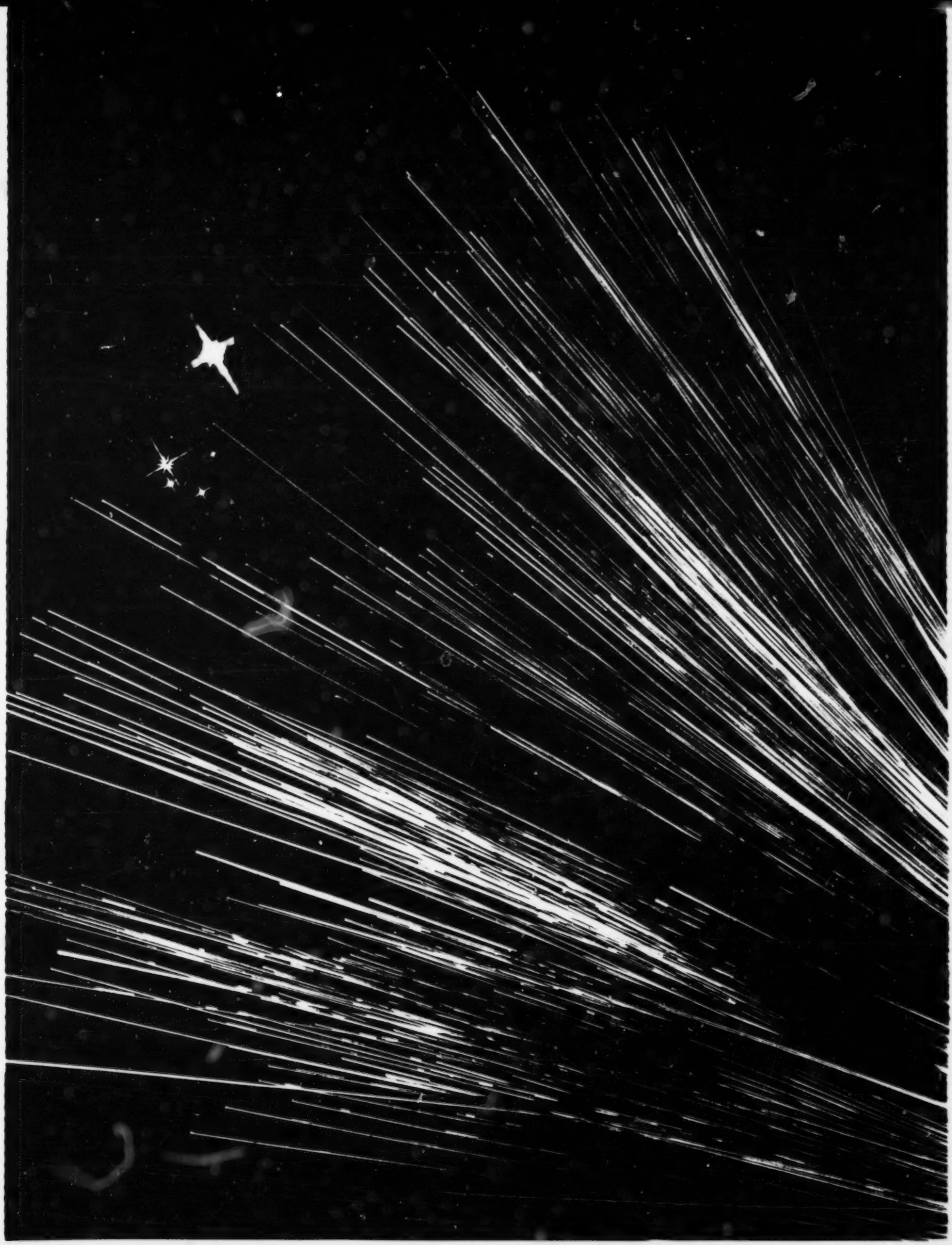
■ In Alberta, telecommunications has grown tremendously, dictated by the need to transfer information over vast distances. From the remote oil and gas well drilling sites to head offices in our two major cities, Edmonton and Calgary, technology such as SCADA (Supervisory Control and Data Acquisition) and cellular has contributed greatly to Alberta's sophisticated telecommunications capability.

■ Alberta has a tradition of commitment to innovative telecommunications services. The development of this industry is one of the most important elements in the province's strategy for economic growth.

■ Through the provincial crown corporation, Alberta Government Telephones, the municipally owned and operated, 'edmonton telephones', and the many companies involved in the telecommunications industry, Albertans enjoy one of the most advanced telecommunications systems in Canada.

■ The Government of Alberta's dedication to excellence in developing telecommunications technology has created a thriving milieu that promotes entrepreneurship and initiative. This publication will introduce you to Alberta's dynamic telecommunications environment and to our companies' expertise.

Fred A. Stewart
Minister
Technology, Research
and Telecommunications



Touching Our Lives

■ Telecommunications reaches out and touches every aspect of our daily lives. It is one of the vital networks of human interaction linking individuals, communities, countries and continents. As the world continues its rapid shift to an information-based society, we are quickly becoming increasingly reliant on the evolving telecommunications industry.

■ At one time telecommunications meant little more than telephones. Technological advances in recent decades have changed that. The development of semiconductors, digital switching, improved transmission capabilities, and the integration of computing and telecommunications industries has made possible the provision of a wide variety of services.

■ Alberta has made major strides in telecommunications. Our carriers are among the best in the world and our manufacturers are setting the pace in a number of specialized areas, for example, network management, cellular radio, SCADA and avionics.

An Advanced Network

■ The province of Alberta has one of the most modern and efficient telecommunications networks in the world. Alberta's 2.4 million residents demand and receive a high level of service. To further bolster that service, a $500,000,000 Individual Line Service (ILS) and Network Modernization program is being implemented in rural areas. The 5-year program switches subscribers from party line to the convenience of private telephone service.

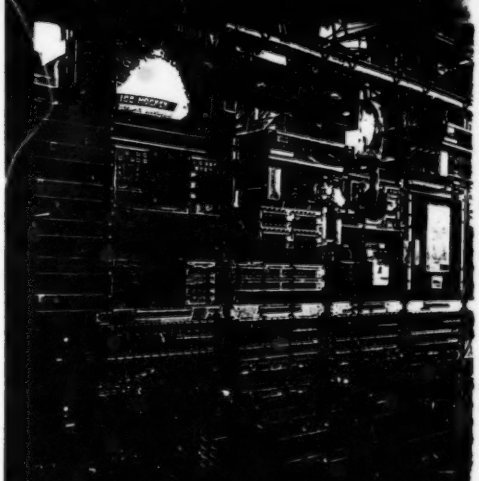
■ The provision of telephone service in Alberta is universal, of high quality and affordable. In fact rates are among the lowest in North America.

Telecommunications Carriers

■ Alberta's two telecommunications carriers, Alberta Government Telephones and 'edmonton telephones' ('et'), with a combined income of $1.3 billion, provide a broad range of services to customers. Together, the telecommunications system is considered the second largest in Canada.

■ Alberta Government Telephones (AGT), established in 1908, is one of Canada's largest telecommunications companies. The provincial crown corporation delivers voice and data services throughout most of Alberta and by way of its subsidiary, Alta Telecom International Ltd. (ATI), sells telecommunications engineering and management expertise to the world.

■ For the 1988 XV Olympic Winter Games, AGT was designated 'Official Supplier of Telecommunications Services'. The company, along with international telecommunications giants, put together a $25 million network — one of the most sophisticated in the history of the Winter Games. AGT used the latest technology to bring the images, sounds and results of the competitions to audiences around the globe.



AGT's Telecommunications Network at Calgary's XV Olympic Winter Games

95 video circuits to transmit television pictures

450 broadcast audio circuits to carry play-by-play commentary

110 data circuits for mobile radios

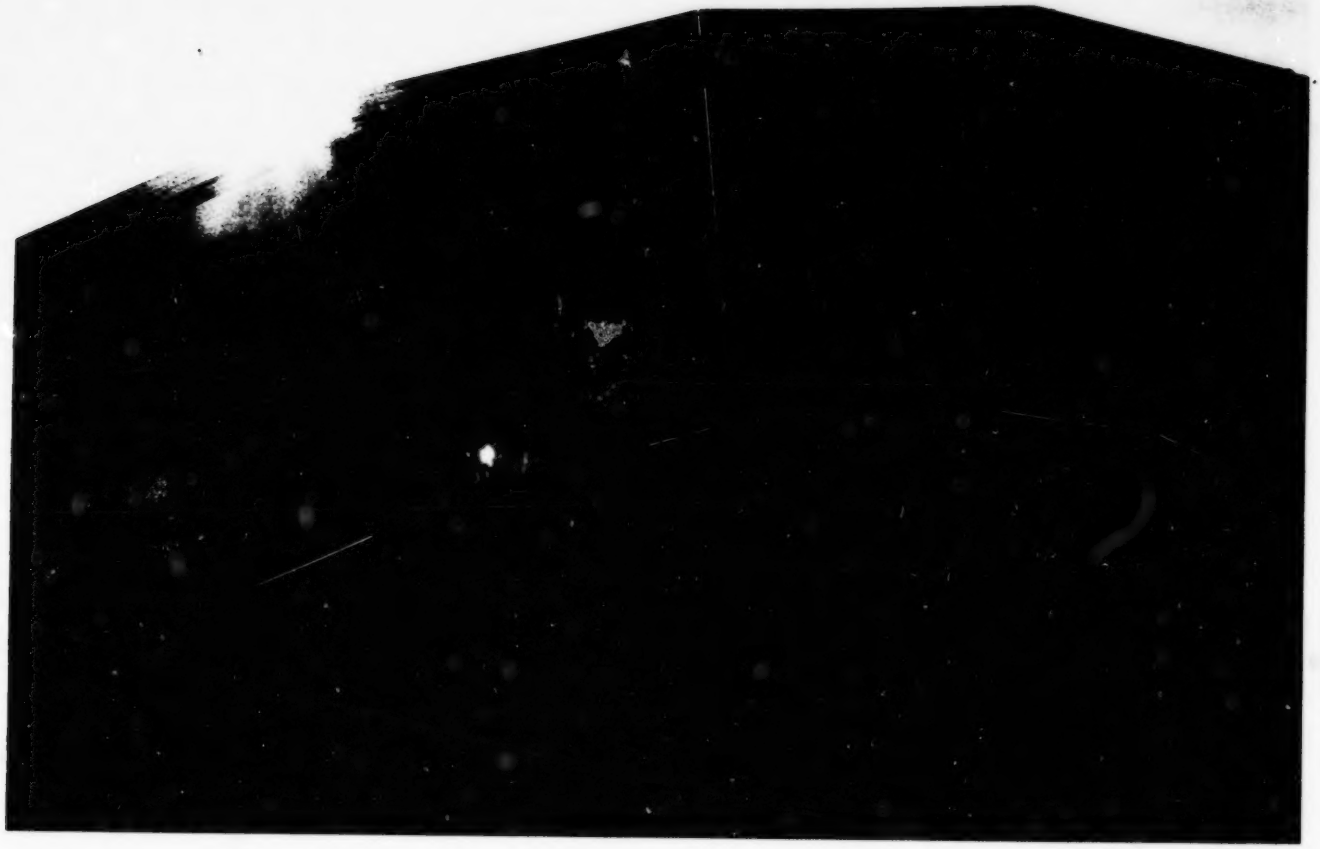
500 public telephones

20 electronic key systems

11 PABX switchboard systems providing 6,000 local telephone numbers

3 more systems for ABC, CBC and the police joint force headquarters

1,623 individual business lines

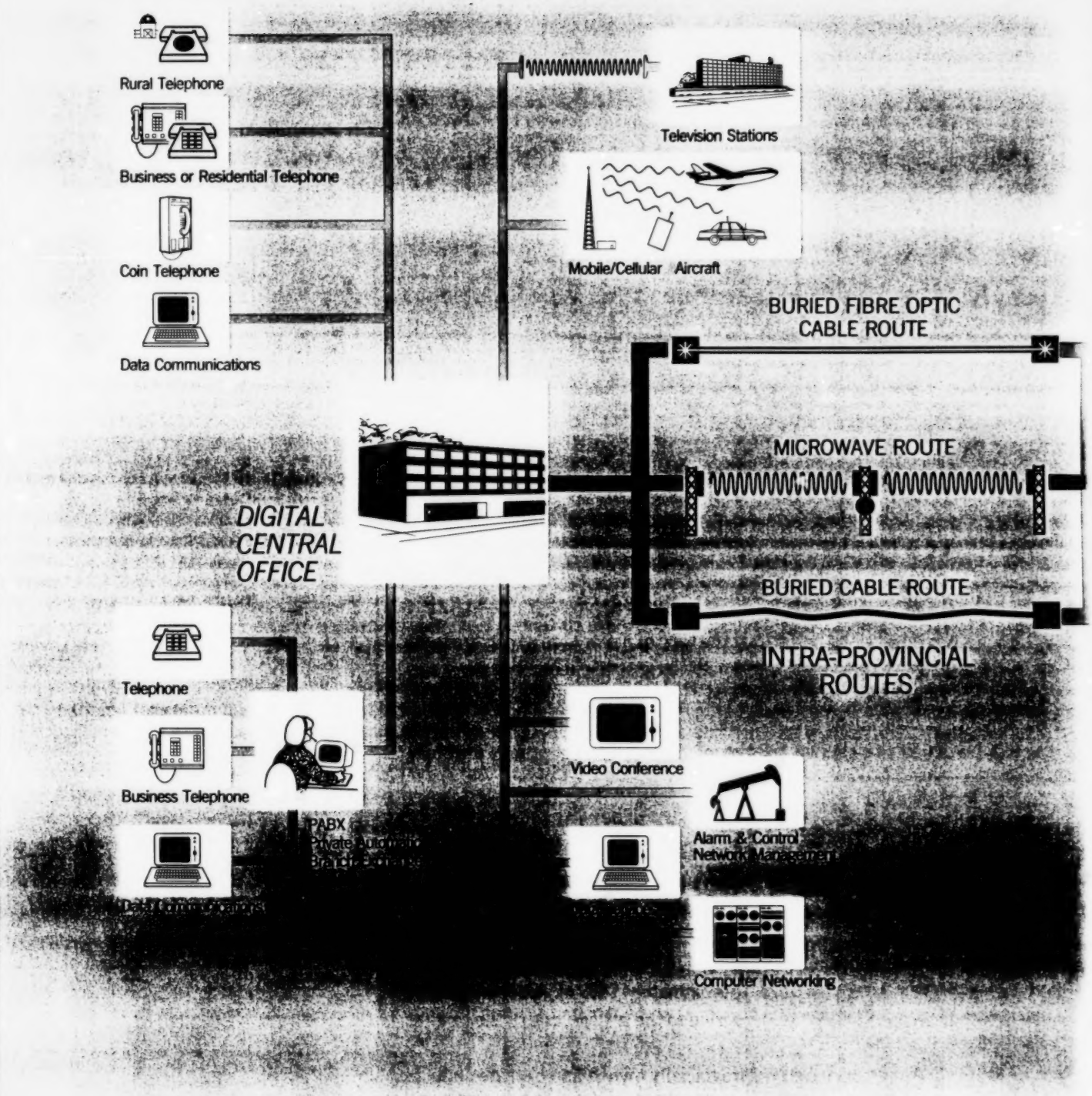


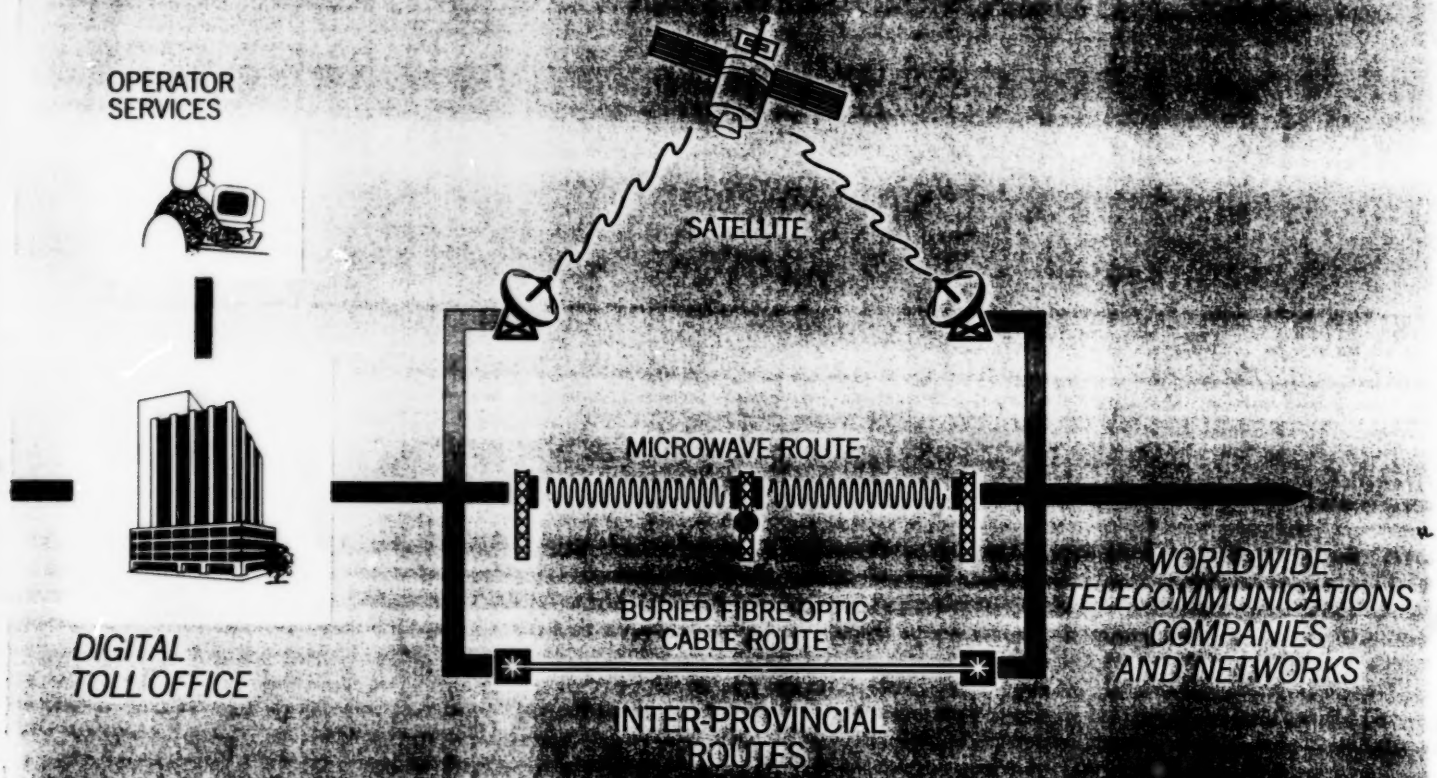
■ 'edmonton telephones', owned by the City of Edmonton and in business for over 80 years, ranks as Canada's sixth largest telephone company servicing over 200,000 business and residential customers in Edmonton. The company utilizes the latest in innovative technology and expertise and is an industry leader in the implementation of fibre optic applications and telecommunications software.

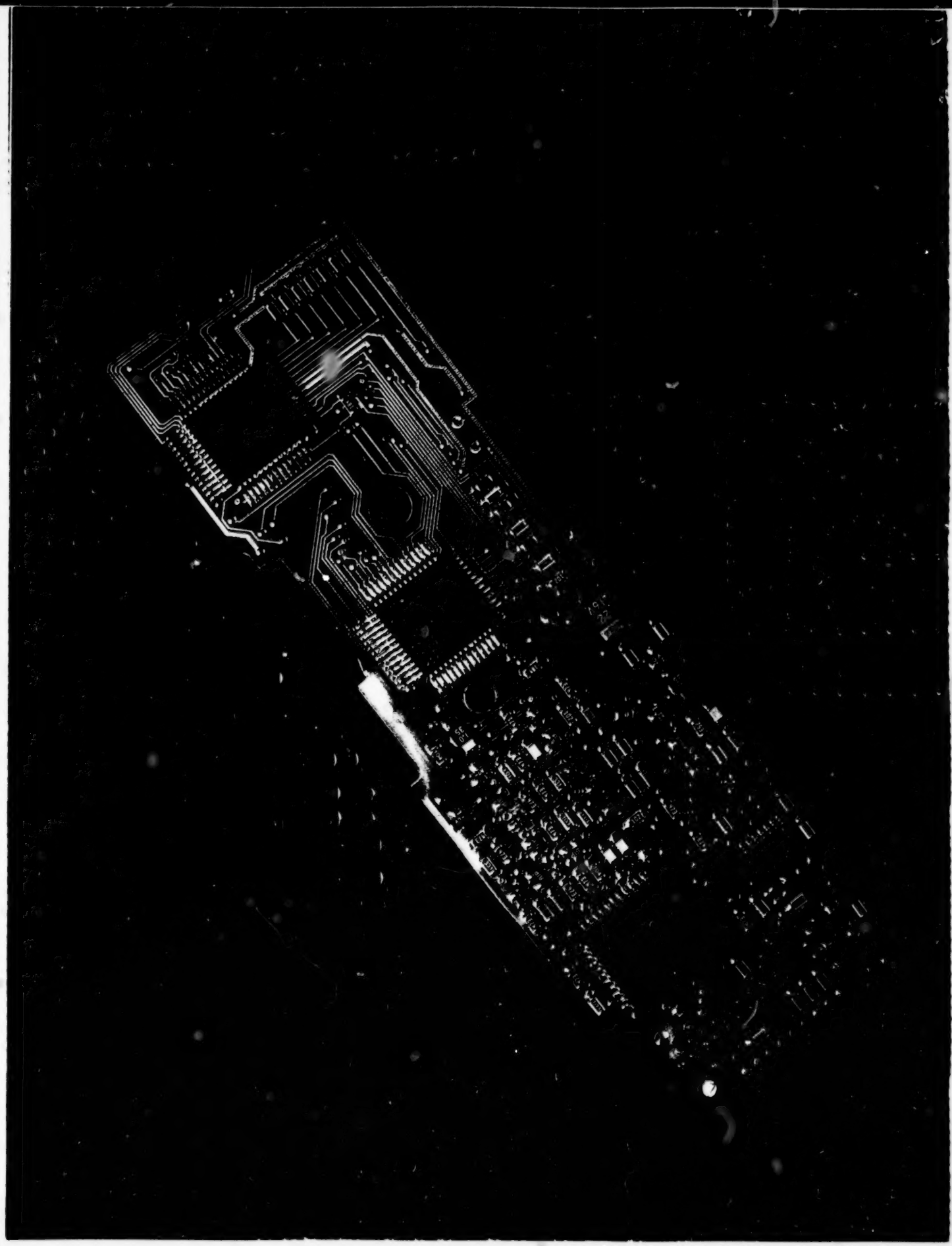
Broadcast

■ Radio, television and cable television play an important role in the lives of Albertans. The province is well served by the electronic media; with 21 subscription television systems (STV), 86 AM radio stations, 65 FM radio stations, 11 television stations, including 115 rebroadcasting transmitters, and 120 cable television systems. Approximately 76% of Alberta's households which have access to cable, subscribe to the service, one of the highest rates in Canada.

■ In addition Albertans have the provincially owned and operated educational television network, ACCESS NETWORK, and the AM and FM provincial educational radio system, ACCESS NETWORK - CKUA.


Rural Telephone
Business or Residential Telephone
Coin Telephone
Data Communications
Television Stations
Mobile/Cellular
Aircraft
BURIED FIBRE OPTIC CABLE ROUTE
MICROWAVE ROUTE
BURIED CABLE ROUTE
INTRA-PROVINCIAL ROUTES
DIGITAL CENTRAL OFFICE
Telephone
Business Telephone
PABX
Video Conference
Alarm & Control
Network Management
Computer Networking


OPERATOR SERVICES
SATELLITE
MICROWAVE ROUTE
BURIED FIBRE OPTIC CABLE ROUTE
INTER-PROVINCIAL ROUTES
DIGITAL TOLL OFFICE
WORLDWIDE TELECOMMUNICATIONS COMPANIES AND NETWORKS

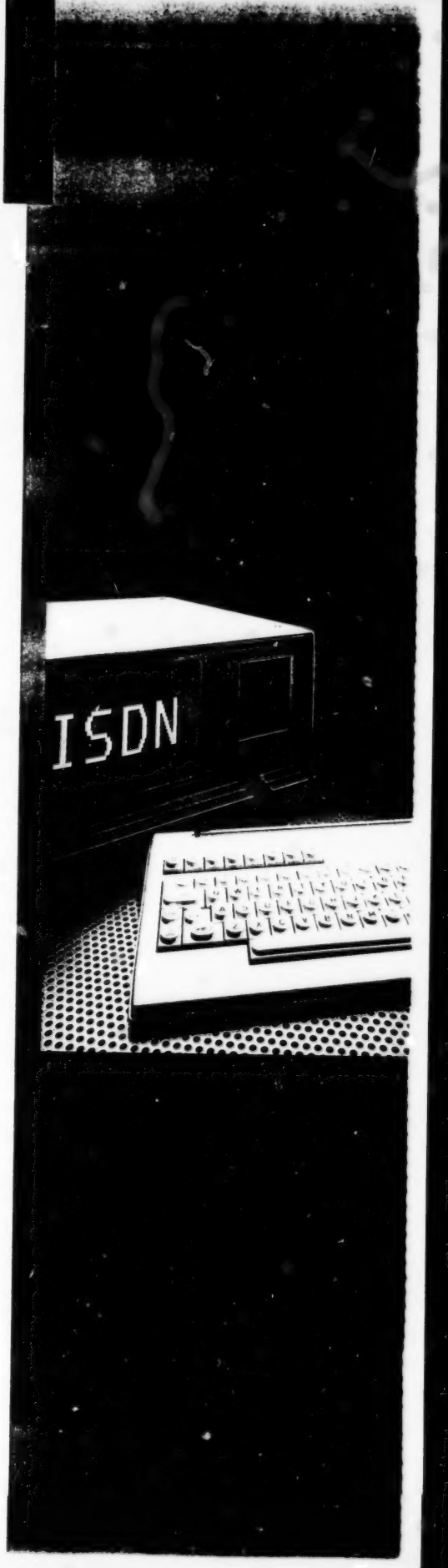


Meeting the Challenge

■ The Government of Alberta, in diversifying the province's resource-based economy, has committed substantial resources to encourage the development of high technology industries. One of the areas specifically targeted has been telecommunications. The province is building on Alberta's present strengths in this rapidly expanding industrial sector. Initiatives have been designed to promote the research and development, manufacturing and marketing of Alberta communications technology and products.

■ The province's telecommunications carriers are active in ensuring Albertans have access to new technological advances. Each incorporates leading edge innovations into their networks. A majority of telecommunications services are offered on a competitive basis. The province supports the development of a strong telecommunications industry which is internationally competitive and capitalizes on export opportunities — for example AGT and the City of Edmonton have entered into the international marketplace and offer telecommunications consulting services.

■ Alberta telecommunications manufacturers are at the forefront of technology and produce a range of products including cellular telephones, terminal equipment, digital switches, remote terminal units for sophisticated electronic monitoring systems, office information services and ISDN (Integrated Services Digital Network) protocol testers. Products, services and expertise are in high demand throughout the world. More than 90% of Alberta telecommunications products are exported internationally.



Highlights in Alberta telecommunications

1921 Alberta installs the first telephone long distance system in the British Commonwealth and the fifth in the world.

1950 Alberta establishes Canada's largest mobile telephone network.

1961 The province becomes the first in Canada to use guide microwave towers — safer, higher and with greater capacity.

1964 Albertans are the first in the world to communicate via a unique buried cable telephone system, tailored to the province's geographic needs.

1967 Western Canada's first touchtone telephone system is activated.

1969 Alberta is the first area in Canada to implement the North American universal help number 911.

1972 Alberta turns to electronic switching and installs the largest system in Canada.

1973 The first custom designed Broadband Surveillance control (BROADS) system and only one of its kind is implemented.

1977 Alberta introduces Canada's first computerized directory assistance system.

1980 Canada's first fully electronic PBX system is installed integrating radio and telephone service for police and fire operations.

The first Canadian installation of commercial fibre optic digital trunk facilities linking three switching centres is installed in Alberta.

1983 Alberta introduces North America's first 400 MHz cellular system and the world's first decentralized system into commercial operation.

Alberta develops and designs the first and only high capacity Fibre Optic System (FOTS-4) in the world and leads the way for fibre optics in the North American telecommunications industry.

1984 The first multi-port protocol converter in the world is developed in Alberta.

1985 Alberta pioneers the first foreign government ownership acquired by Japan's giant telecommunications company, Nippon Telephone Telegraph Corporation.

1987 In Alberta, the transmission of simulated voice and data signals over 107 km of fibre optic cable without the use of repeaters — a breakthrough in North America.

1988 Alberta hosts '88 Olympics and provides the most sophisticated telecommunications network in the history of the Winter Games.

Satellite Dish Farm - '88 Olympics

Building Blocks for Progress

■ A well-developed infrastructure ensures Alberta's performance and competitiveness in advanced technology industries.

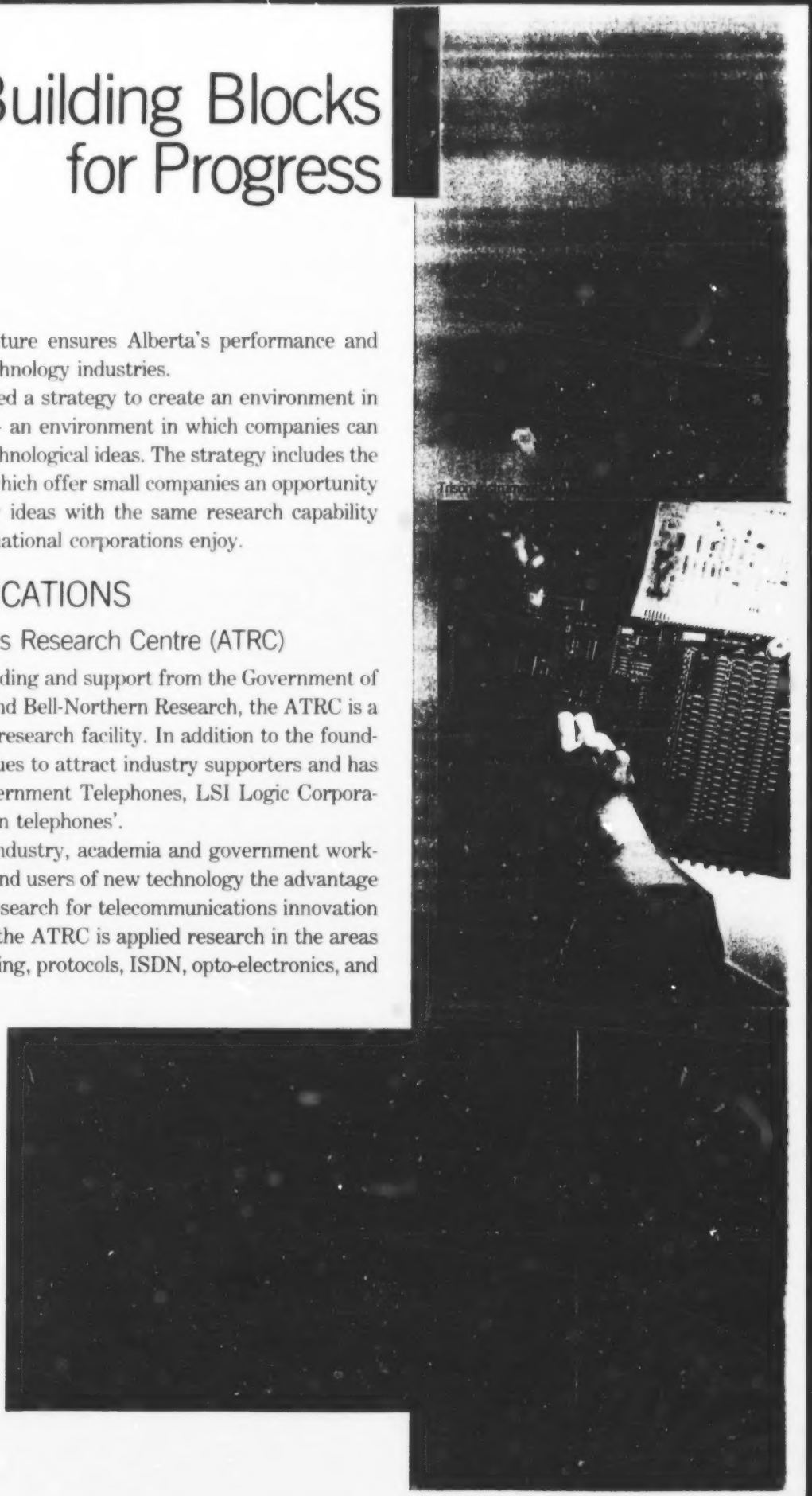
■ The government has designed a strategy to create an environment in which technology can flourish – an environment in which companies can develop, produce and market technological ideas. The strategy includes the formation of "building blocks" which offer small companies an opportunity to develop advanced technology ideas with the same research capability that large companies and multinational corporations enjoy.

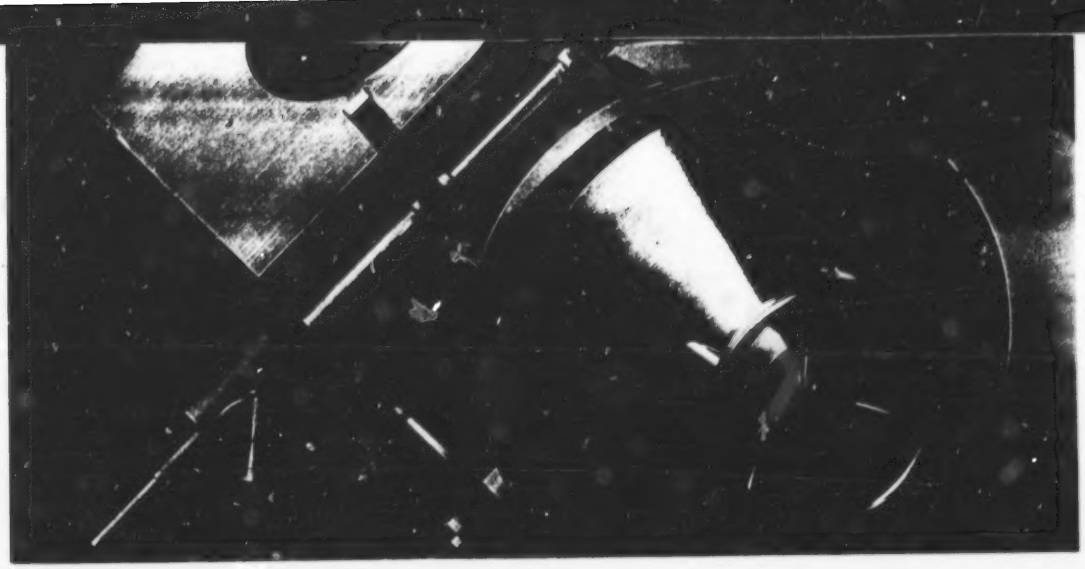
FOR TELECOMMUNICATIONS

Alberta Telecommunications Research Centre (ATRC)

■ Established in 1985 with funding and support from the Government of Alberta, University of Alberta and Bell-Northern Research, the ATRC is a world-class telecommunications research facility. In addition to the founding members, the Centre continues to attract industry supporters and has the sponsorship of Alberta Government Telephones, LSI Logic Corporation Canada Ltd., and 'edmonton telephones'.

■ The unique relationship of industry, academia and government working together, offers developers and users of new technology the advantage of collaborative education and research for telecommunications innovation and advancement. The focus of the ATRC is applied research in the areas of fibre optics, network engineering, protocols, ISDN, opto-electronics, and digital radio.





Alberta Microelectronic Centre (AMC)

■ With more than $40 million of funding provided by the Province of Alberta, the AMC has established the only non-captive microchip design and fabrication facility in Canada. The AMC's leading edge design capabilities and state-of-the-art fabrication facilities offer clients unrestricted, confidential services on a contract basis.

Electronic Industry Information System (EIIS)

■ Developed in 1986, this computerized network is linked to an international information bank. Alberta manufacturers can find on-line, the most up-to-date technical and design information available.

Electronics Test Centre (ETC)

■ This modern, well-equipped and highly efficient $10 million testing facility, recognized by national and international certification agencies, helps manufacturers to improve electronic designs. Companies can increase international market penetration by using ETC's certification testing, evaluation and consulting services. The Centre's expertise is sought internationally; it works on a continuing basis with industry in Europe, and the Pacific Rim countries.

Supercomputer Services (SCS)

■ This facility offers industry, research and training in vector computing technology and develops state-of-the-art supercomputer application software. The supercomputer is capable of calculation-intensive research and can create a model or simulate an idea, solving problems in minutes what might take a smaller computer hours or days.

Canadian Distance Learning Development Centre (CDLDC)

■ Established in 1987, the Centre's mandate is to research, develop, manufacture and market products to support the delivery of distance education. The development of leading edge distance learning systems, services and technology will place the province in a position to be a world leader in this portion of the information technology industry.

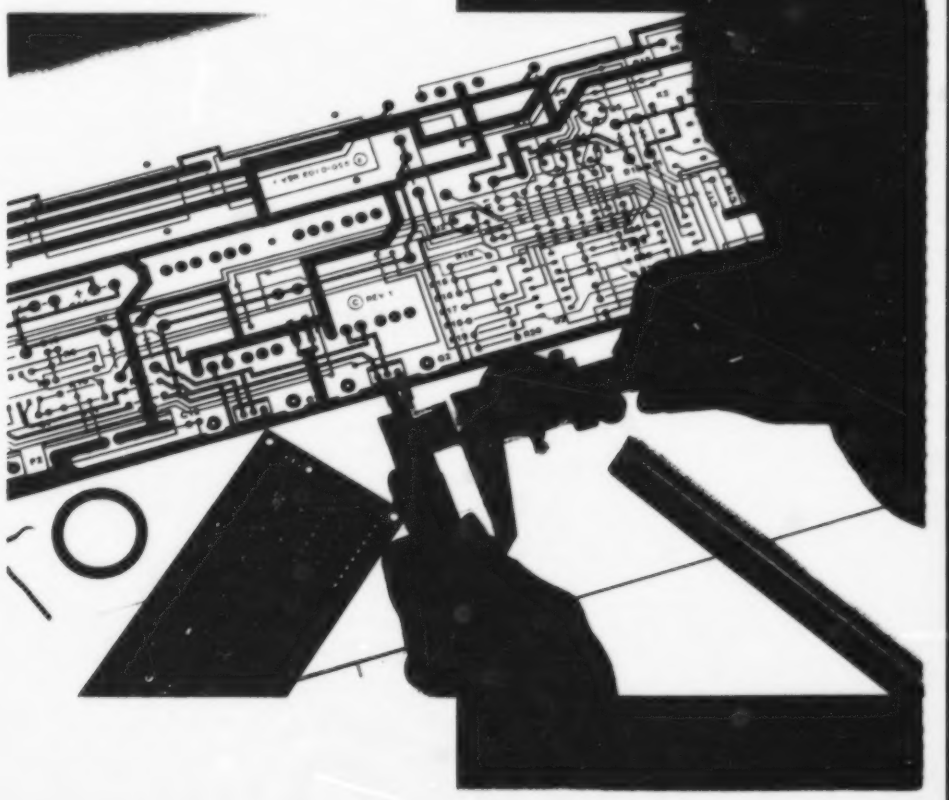
Achieving Excellence in Education

■ With two technical institutes and two universities that teach programs of study based in telecommunications, the province of Alberta has a readily available pool of highly qualified experts.

■ These technologists and engineers are trained at the vanguard of telecommunications. They have completed diploma, baccalaureate or graduate programs, and their training enables them to design, manufacture, and maintain telecommunications systems.

■ Alberta's educational institutions have long recognized the importance of the information and communication technologies (informatics) to education, and have established themselves as authorities in the distance learning field. Utilizing such technologies as teleconferencing, Computer Managed Learning (CML), Computer Assisted Learning (CAL), broadcast video and audio, and facsimile transmission, numerous and various courses are offered at the post-secondary level, kindergarten to grade 12 level, as well as to meet specific training needs.

■ AGT, 'et' and ACCESS NETWORK provide the telecommunications infrastructure necessary to support distance education services in Alberta.



Alberta Means Success

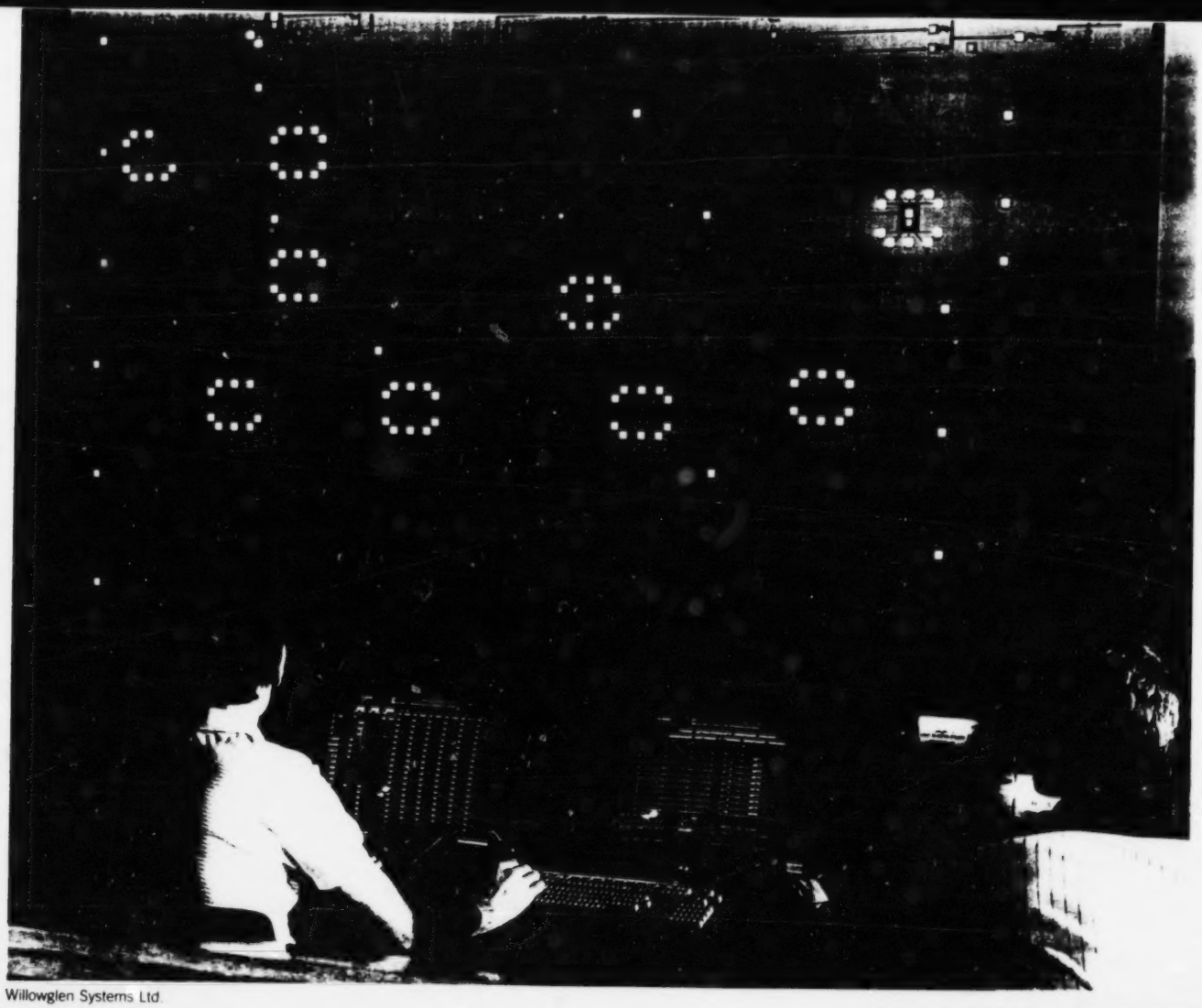
■ Today telecommunications technology is more important than ever. Alberta's early involvement and commitment to the industry is placing the province at the forefront of one of the fastest growing sectors of the global economy.

■ Alberta's telecommunications companies are gaining an international reputation for their technological expertise. From mapping in Greece, to monitoring fibre optic networks in the United States, to providing telephones to China, our industry continues to develop superior products and services.

■ **NovAtel Communications Ltd.** in Calgary, a 'homegrown' company, in 1983, put North America's first 400 MHz cellular system and the first decentralized system in the world into commercial operation in Alberta. Today, NovAtel is one of the largest cellular telephone suppliers in North America. The company is the only Canadian manufacturer of cellular telephone systems and terminals, and is one of the few in the world involved in the three cellular manufacturing areas — terminals, systems, and service support.

The Spectacular Growth of Alberta's Mobile/Cellular Telephone System

In 1987, 70% of Alberta's 660,411 square kilometres is covered by mobile/cellular telephones.

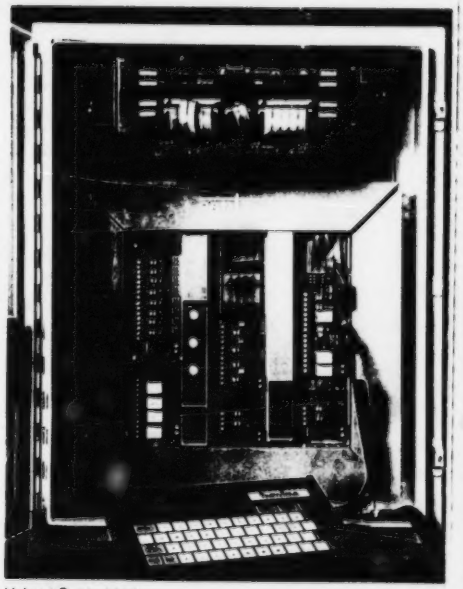


Willowglen Systems Ltd.

■ **Northern Telecom Canada Ltd.**, is one of the four largest telecommunications manufacturers in the world and is the largest international supplier of fully digital communications systems and integrated office information systems. In Alberta, the company employs over 1,600 people in its digital switching, and business products plants.

■ Building on the expertise developed in support of the oil and gas industry, Alberta's SCADA companies such as **Willowglen Systems Ltd.**, **Valmet-Sentrol Ltd.**, **DATAP Systems Ltd.** and **Westronics Ltd.** have firmly established themselves as major champion suppliers of network management and tele-control systems throughout the world.

■ Alberta firms are also making their mark in the space industry. **ITRES Research Limited** of Calgary for example, in cooperation with the University of Arizona in the United States, has developed an imager spectrograph instrument which is being used in the space shuttle program. ITRES is also working on the design of instruments for Canada's space program, to transmit images to stars and distant galaxies. **Norstar Instruments Ltd.**, also of Calgary, has developed advanced technology in the field of precise navigation and positioning, by use of satellites.



Valmet-Sentrol Ltd.

■ Another leading firm, **IDACOM Electronics Ltd.**, (International Data Analysing Communications Computers) of Edmonton, is setting the world standard in protocol testing and is the designated ISDN protocol development centre for Germany's giant telecommunications company, Siemens A.G. ISDN is the latest telecommunications technology, which when implemented throughout the world, offers users the capability to connect any computer, access different services and transfer information through standard telephone lines.

■ **Pelorus Aviation Supplies Canada Ltd.** is a front runner in the development of state-of-the-art aircraft landing and navigational systems.

■ Still other Alberta companies continue to make major strides in the world telecommunications market with their unique products and technology.

■ Alberta's success in the telecommunications industry comes from a combination of talent, experience and knowledge. Together with a commitment to cultivate a dynamic advanced technology environment, Alberta offers exciting opportunities for growth.

■ This directory presents a selection of companies in the telecommunications industry in Alberta; the list is by no means exhaustive.

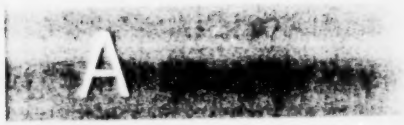
■ Included are manufacturers of telecommunications equipment, producers of communications systems, makers of SCADA systems, developers of data control systems, manufacturers of telecommunications products, suppliers to the telecommunications industry and the two main service providers. These Alberta companies are successfully marketing their products and services in Canada and worldwide.

■ The Alberta telecommunications industry offers attractive opportunities for investors, entrepreneurs and innovative organizations who want to be part of leading edge telecommunications technology.

■ Each profile provides a brief description of an enterprising Alberta company within the telecommunications industry. Please contact any of these firms for more information on products and expertise.

Canutel Industries Ltd.

Westronic Inc.



Alberta Government Telephones (AGT)

10020 - 100 Street
Edmonton, Alberta
T5J 0N5
(403) 425-7315

Contact: Hal Neldner, President

Company Founded: 1908

Products and Services: Employing over 11,000 people, AGT provides a broad range of telecommunications services to Albertans. The company's operations include local and long distance service, business systems, terminal equipment and mobile communications.

The Business Systems division serves the Alberta business market. AGT has the exclusive rights to distribute the Canadian designed Panther electronic key system, and it offers Northern Telecom's Vantage product line on a rental basis. AGT also provides CELLULAR PLUS service.

Sales Activity: AGT delivers global voice and data services. Through its subsidiaries and joint ventures, the company sells Alberta communications expertise worldwide.

Alphatel Systems Ltd.

11428 - 168 Street
Edmonton, Alberta
T5M 3T9
(403) 451-5761

Contact: Dr. Robert A. Abell
President

Company Founded: 1981

Products and Services: The company specializes in the custom design of interactive computer-based information, training and directory systems. These systems provide animated, high impact, graphic displays in a full range of colors and combine laser videodisc video and sound. These systems have mainly met commercial property and museum exhibit requirements, although applications as diverse as process control and security systems have been addressed. The company has extensive experience in interfacing computers to various electromechanical systems as well as telecommunications devices. Alphatel Systems is affiliated with Alphatel Computer Products.

Sales Activity: The products and services are sold to government and educational organizations and the telecommunications industry.

Alta Telecom International Ltd. (ATI)

Suite 2400, 411 - 1 Street S.E.
Calgary, Alberta
T2G 4Y5
(403) 231-8307

Contact: Graham Pollock, President

Company Founded: 1981

Products and Services: The company is a subsidiary of Alberta Government Telephones. ATI markets the resources of AGT to the international telecommunications community. ATI, with interests throughout the world, has completed numerous projects in several countries.

Sales Activities: ATI's objective is to provide the latest telecommunications technologies to major industries, including other telecommunications companies.

Austec Electronics Ltd.

1006, 11025 - 82 Avenue
Edmonton, Alberta
T6G 0T1
(403) 432-1878

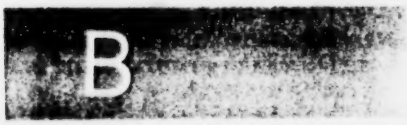
Contact: W.K. Brokelsby, P. Eng.,
President

Company Founded: 1978

Products and Services: Austec designs and manufactures low power radio tracking and identification transmitters, receivers and associated equipment. The equipment is used in wildlife management, biological research and other radio location and telemetry applications. The company has experience in the design and use of

thick-film microcircuit technology and in microwave circuits in addition to more conventional electronics. Contract design and manufacture is undertaken.

Sales Activity: Products are sold mainly to government and educational organizations in several countries.



Barnett Engineering Ltd.

215, 7710 - 5 Street S.E.
Calgary, Alberta
T2H 2L9
(403) 255-9544

Contact: Brian Barnett, President

Company Founded: 1977

Products and Services: The company offers engineering services in the areas of telecommunications and electronics. These services are divided into two major areas: the first is communications systems engineering in fields of mobile radio (voice and data), point-to-point radio, remote control, alarm reporting and SCADA.

Services provided include system design, cost and feasibility studies, propagation studies, performance and equipment specifications, tender evaluation, start-up assistance, and systems and operations manuals.

The second area is communications equipment engineering, specializing in tone signalling and voice synthesis. The company performs equipment design and manufacture, interfacing, systems integration, and contract product development.

Major product lines include voice alarm reporting units for radio and/or telephones and automatic number identification (ANI) systems for vehicles.

Sales Activity: Barnett sells to petroleum and telecommunications industries, as well as to manufacturers and retailers.

Bartronics (1972) Ltd.

11609 - 145 Street
Edmonton, Alberta
T5M 1V9
(403) 455-6032

Contact: Raymond J. Barnes
President

Company Founded: 1972

Products and Services: Bartronics provides custom design, manufacturing and systems assembly of electronics equipment. One of its major areas is telecommunications electronics, including custom manufacturing of micro-processor controlled voice channel switching equipment.

Baydala Equipment Leasing Ltd.

15618 - 116 Avenue
Edmonton, Alberta
T5M 3S5
(403) 451-5532

Contact: Wally Baydala, President

Company Founded: 1977

Products and Services: The company manufactures single-layer printed circuit boards and voice communication systems. The voice communication systems are duplex voice switching systems for voice or sound distribution.

Sales Activity: Products are sold to medical and correctional institutions.

Calgary Controls Ltd.

7056 H Farrell Road S.E.
Calgary, Alberta
T2H 0T2

Contact: Walter H. Lindenbach
President

Company Founded: 1970

Products and Services: Specialized voice frequency/DTMF equipment for use with two-way radio and four-wire facilities. Telephone/radio interconnect equipment and voice and pager communications. DTMP control equipment for supervision of radio facilities and networks. Alarm reporting, supervision and control equipment using DTMF signalling and synthesized voice annunciation. Equipment for railroad communications including maintenance of way, locomotive, and passenger public address requirements. Complete two-way radio sales, service, and installation facilities.

Sales Activity: Customers include railroads, oil and gas companies, telephone and utilities companies across Canada and the U.S.

Canadian Offshore Group

3640 Dartmouth Road S.E.
Calgary, Alberta
T2G 4A6
(403) 243-6775

Contact: Jim Watson, President

Company Founded: 1979

Products and Services: Canadian Offshore International Marketing Service Inc. - Domestic and international marketing of telecommunications, intercom systems and station equipment for hazardous, industrial, marine and commercial locations. Marketing, procurement and consulting services also available.

Canadian Offshore Safety Technology & Services Co. - Manufacturers of telecommunications, intercom systems, PABX, data links, interfaces, explosion proof telephones, lighting, station equipment and signalling devices. Wire, cable, environmental connectors and communication masts. It also offers a full system design, fabrication and installation service for telecommunications and electronics.

Linco Enclosures - Design and fabrication for: 19-inch rack systems, cabinets, consoles, instrumentation panels, workstations, security monitors, acoustic booths, radio and television consoles, marine bridge consoles, mechanical equipment enclosures, van bodies and canopies, commercial and exhibit displays.

Linco Medical - Manufacture and marketing of medical diagnostic equipment for audiology, including the Linco auditory response cradle and the Linco pediatric audiometer.

Canutel Industries Ltd.

P.O. Box 610
College Heights, Alberta
T0C 0Z0
(403) 782-4838

Contact: Hugo W. Wegmuller
President

Company Founded: 1981

Products and Services: Canutel provides a unique service, offering custom/contract assembly of electronic equipment. The company specializes in insertion, assembly and testing of printed circuit boards and assembly and testing of complete electronic equipment on a build-to-print basis. The company is certified to manufacture to military standards such as AQAP6 and MIL-1-45208A and to relevant Q.A. and Q.C. procedures. Canutel is an approved supplier to major U.S. and Canadian prime contractors.

Sales Activity: Canutel's services are provided to various companies and government agencies in the telecommunications, industrial, security, computer and the professional electronic field in general.

Export Activity: Canutel has set up a similar operation in Michigan, U.S. through its associate company, Canutel Berrien Inc., and further U.S. operations are in the planning stage.

Champ Armstrong Communications Inc.

#5, 2010 - 30 Avenue N.E.
Calgary, Alberta
T2E 7K9
(403) 250-3202

Contact: Keith A. Robson
Vice President, Finances

Company Founded: 1986

Products and Services: Champ Armstrong specializes in the design, manufacture, and sale of radio frequency technology for civil aerospace markets, and has a unique capability in Surface Mount Device Technology. The company's products include transponders; anti-collision strobe lighting for air, land and marine vehicles; data port and fix station interfaces; hands-free unit testing equipment used for cellular telephone testing; and voice scramblers. Champ Armstrong also provides custom power supplies manufacturing services which include AC to DC constant power, DC constant power, and high and low voltage power supplies.

Sales Activity: The company sells to local industries and is also targeting its products at government and large military industries in the U.S., Europe and Canada.

Export Activity: The company has found an export market for its strobe lighting in the U.S.

Circa Telecommunications Ltd.

7210G - 5 Street S.E.
Calgary, Alberta
T2H 2L9
(403) 258-2011

Contact: Ivan Smith, President

Company Founded: 1985

Products and Services: Circa specializes in the development and manufacture of protection and distribution devices, such as lightning arresters and electrical surge protectors for the telecommunications industry. Circa designs its products to accommodate customer modifications to meet the needs of individual telephone companies.

Sales/Export Activity: Circa sells to major telephone companies, including to the U.S.

Commtronics Communications Ltd.

#6, 3800 - 19 Street N.E.
Calgary, Alberta
T2E 6V2
(403) 250-9260

Contact: Doug Michetti, President

Company Founded: 1971

Products and Services: Commtronics designs and manufactures specialized equipment including: general mobile telephone service test units, digital voice alarm systems, telephone interface equipment and remote control industrial control interfaces. It will manufacture to own design or to customer's specifications.

Sales Activity: The products are sold to the telecommunications industry.

CS4 Telecom Inc.

2700 CN Tower
10004 - 104 Avenue
Edmonton, Alberta
T5J 0K1
(403) 436-0076

Contact: Rob Walker
General Manager

Company Founded: 1986

Products and Services: CS4 Telecom is engaged in the design, manufacture and implementation of telecommunications equipment and systems for the domestic and international marketplace. Products include ultra-linear amplifiers, microwave transmitters and receivers for Vsats, short-haul microwave transmission systems, A/D-D/A signal conversion systems for R-F, and rebroadcast terminals. The company also does contract research, design and development of radio-frequency products.

Sales Activities: The company sells to the petroleum, mining, forestry and telecommunications industries, as well as manufacturers and federal government agencies.

C.S.I. Communications Systems Ltd.

P.O. Box 1769
Morinville, Alberta
T0G 1P0
(403) 939-7560

Contact: Bob Haagensen, President

Products and Services: The company manufactures advanced high frequency radio communications systems which facilitate communication from remote locations, using telephone, data or facsimile transmissions patched through dedicated land lines. Its product, the ATR-10 communications console provides a link between HF/VHF/UHF radio systems and devices such

as telephones and telex equipment. The ATR-7 Selcal is a selective calling unit which codes and decodes messages electronically. C.S.I. also designs and builds vessel surveillance systems.

Sales Activity: C.S.I. provides communications for offshore drilling companies, major North American airlines and resource companies. The company also sells to major communications systems manufacturers, military organizations, the government and other various private sector industries.

Export Activity: C.S.I. exports to the U.S., Europe and Southeast Asia.

D

DATAP Systems

1167 Kensington Crescent NW
Calgary, Alberta
T2N 1X7
(403) 283-3601

Contact: Victor Thomas
Vice President

Products and Services: DATAP Systems is a division of Sandwell Swan Wooster Engineering Company Ltd., with the head office in Calgary, and branches in Vancouver, British Columbia, and Atlanta, Georgia. DATAP specializes in turn key automation and control systems with specific focus on network management systems for the telecommunications industry. Network management applications include:

- Network Surveillance, control and performance monitoring for facilities such as terrestrial microwave, fibre optic transmission systems, satellite ground stations, digital cross connect switches and digital switches.
- Maintenance management applied in such areas as historical analysis of operational data, trouble ticket administration, force assignment and dispatch, facilities records and maintenance planning.
- Engineering and planning functions such as modeling, simulation and facility forecasting.
- Subscriber services such as service order administration.
- Traffic administration and control such as traffic metering, preplans and switch administration.

DATAP's IRIS 7 (Intelligent Real-time Information System) product forms the basis for application in network management described above as well as in applications such as pipeline control, oil and gas, production automation, electrical transmission and distribution networks and materials handling.

Sales/Export Activity: DATAP products and services are sold to domestic and international markets.

DATEK Industries Ltd.

8522 Davies Road
Edmonton, Alberta
T6E 4Y5
(403) 465-1530

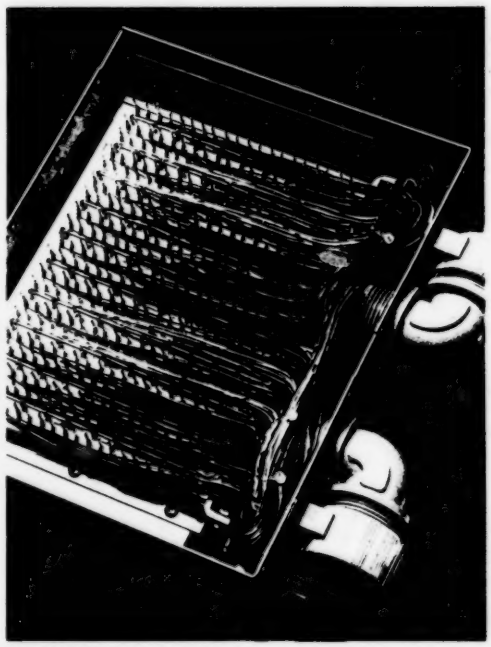
Contact: Alexander J. Frei
Sales Engineer

Company Founded: 1971

Products and Services: DATEK designs, manufactures, and programs Supervisory Control and Data Acquisition (SCADA) microcomputer systems, and telemetry systems. The company offers turnkey systems including oil and gas, power, water management and industrial control systems, manufactures printed circuit boards, handles environmental burning tests, sheet metal fabrication and plastic injection moulding and has facilities for both hardware and software design engineering.

Sales Activity: The products and services are sold to the energy and utility industries and to government organizations and departments.

Research Activity: DATEK has a comprehensive development program in remote control and data acquisition instrumentation.



Circa Telecommunications Ltd.

Dycor Industrial Research Ltd.

130, 17303 - 102 Avenue
Edmonton, Alberta
T5S 1J8
(403) 486-0091

Contact: Hank Mottl
General Manager

Company Founded: 1981

Products and Services: Dycor is working in many technology areas, including computer system design and integration, data acquisition and control systems and custom instrumentation design. Dycor offers extensive software development facilities and marketing and distribution services.

Sales Activity: The company provides products and services to the research, industrial and military communities.

Export Activity: Dycor is active in the American and worldwide markets.

'edmonton telephones'

10044 - 108 Street
Edmonton, Alberta
T5J 3S7
(403) 441-2122

Contact: Brian Gibson
Acting General Manager

Company Founded: 1905

Products and Services/Sales Activity: 'edmonton telephones' is the largest municipally-owned telecommunications company in Canada. The company provides an integrated range of telecommunications services and products to residential and business customers. 'et' has built a reputation for innovative design and application in metropolitan telecommunications.

Export Activity: ETCOM Enterprises is the domestic and international marketing arm of 'et'. ETCOM has contracts for products and services throughout the world including the U.S. and China.

EDO Canada Ltd.

#8, 6320 - 11 Street S.E.
Calgary, Alberta
T2H 2L7
(403) 255-6667

Contact: Fraser B. Rea
Marketing Manager

Company Founded: 1979

Products and Services: EDO Canada Ltd. is a three division company specializing in the areas of electronics, fiber composites and structural ceramics.

The Electronics Division specializes in the manufacture of integrated navigation systems for navy surface vessels and satellite positioning and navigation instrumentation using both the Transit and GPS satellite system.

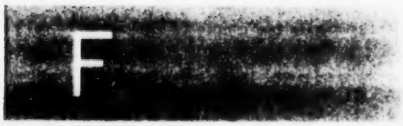
The Fiber Composites Division designs and manufactures light-weight, advanced fiber-reinforced structural composite products using "state-of-the-art" filament winding, laminating and geo-forming processes.

The Ceramics Division is in the development stage, but will consist of a production sized pilot plant with full R & D staff and laboratories to address the application of ceramics in the aerospace industry.

Sales Activity: The products and services are sold to the aerospace, defence and survey industries worldwide.

Export Activity: EDO Canada is active in the international marketplace, selling in Europe, South America, the Far East and the United States.

Harding Instrument Ltd.



Frontec Logistics Corporation

Corporate Headquarters
10035 - 105 Street
Edmonton, Alberta
T5J 2V6
(403) 420-7112

Contact: George Paicu, President

Products and Services: Frontec specializes in facilities management, operation and maintenance; logistics support in remote locations; technical services; power generation; communications networks, and has expertise in computerized management support systems. Frontec is jointly owned by ATCO and Canadian Utilities.

Sales Activity: Frontec has the contract to operate and maintain the North Warning System. The company offers its services to the defence industry, resource companies, government and business.

Harding Instrument Ltd.

4608 - 97 Street
Edmonton, Alberta
(403) 438-6800

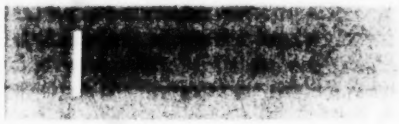
Contact: Pat Harding, President

Company Founded: 1969

Products and Services: Harding Instrument provides electronic research/design/development services and custom manufacturing. The company specializes in microelectronic-based products for the telephone, oil and gas, and agricultural industries. It manufactures key telephone systems accessories including paging amplifiers and AC power supplies as well as flow totalizers, flow computers, and other monitor/control systems.

Sales/Export Activity: The firm markets some of its products through OEM contracts and others through distributors and dealers. It has an extensive marketing network for its telephone products and has signed distribution agreements with telephone equipment outlets and major telephone companies in the U.S. and Canada.

Research Activity: The firm does all of its own R & D. Besides its own product development, Harding Instrument undertakes custom electronic engineering projects.



IDACOM Electronics Ltd.

9411 - 20 Avenue
Edmonton, Alberta
T6N 1E5
(403) 450-2468

Contact: Pauline Hale
Section Manager, Marketing

Products and Services: IDACOM specializes in the design and manufacture of sophisticated data communications testing equipment. The company, a world leader in its field, produces high speed data network analyzers and communications protocol testing devices. Its major product is the PT/MPT Family of Protocol Analyzers, designed to monitor, emulate datacommunications protocols, and can be used as a development aid in simulation.

Sales Activity: Major clients are telephone companies and other signal carriers, manufacturers of communications equipment and private operators of data communications networks.

Export Activity: IDACOM products are currently in use in over 18 countries. Approximately 90% of the products and services are exported, mainly to the U.S., Europe and Japan.

Innovage Microsystems Inc.

#5, 6125 - 12 Street N.E.
Calgary, Alberta
T2H 2K1
(403) 255-9590

Contact: Michael Kaiser, President

Company Founded: 1981

Products and Services: Innovage Microsystems Inc. is engaged in the microprocessor test equipment field. The company's major product, the TRACER 100XTR, originated from the need for a handheld, easy-to-operate, low-cost test instrument that could facilitate the quick identification and correction of problems in microprocessor-based products.

The TRACER has been designed to aid engineers and technicians in the complete product cycle: hardware design, software development, manufacture and service.

The TRACER has distinct advantages in terms of price, functionality, ease of operation and flexibility. Additional interfaces for 16-bit microprocessors are being developed.

The company also provides consulting and R & D services in electronics.

Sales Activity: Innovage currently markets to the electronics, telecommunications and computer industries as well as other manufacturers.

INTERA Technologies Ltd.

2500, 101 - 6 Avenue S.W.
Calgary, Alberta
T2P 3P4
(403) 266-0900

Contact: B.L. Bullock, President

Company Founded: Early 1970s

Products and Services: INTERA is the first company to develop synthetic aperture radar (SAR) systems for commercial use. The firm has introduced a new system called STAR-2, which will operate as a companion to STAR-1, the company's original airborne radar system. This new system incorporates advances such as enhanced processing speed, higher resolution data collec-

tion, all-digital display and recording systems and a superior annotation system. These new features mean better turnkey data collection and mapping services, including the ability to provide digital terrain models, radar image maps, topographic maps and other radar map products.

Sales/Export Activity: INTERA customers include governments and government agencies and major oil companies around the world: U.S.A., Canada, Indonesia, Europe. INTERA has contracts in Sumatra and Scotland. The company has branches in Texas and Ontario.

Interalia Inc.

119, 2723 - 37 Avenue, N.E.
Calgary, Alberta
T1Y 5R8
(403) 291-0991

Contact: Cal Manz, President

Company Founded: 1975

Products and Services: Interalia manufactures microprocessor-based telecommunications systems. All design, layout, hardware and software is handled with in-house expertise. Interalia's products include digital voice announcement devices and digital voice recording devices and other specialized applications.

Sales Activity: The products are sold to the telecommunications industry.

Export Activity: The company has branches in Morgan Hill, California and Minneapolis, Minnesota.

ITRES Research Limited

Suite 141, Calgary Advanced Technology Centre
6815 - 8 Street N.E.
Calgary, Alberta
T2E 7H7
(403) 274-7440

Contact: Dr. C.D. Anger, President

Company Founded: 1979

Products and Services: ITRES provides research and development services in electronics, electro-optics and advanced instrumentation. The company manufactures digital scientific cameras, airborne remote sensing equipment, x-ray imaging equipment, spectral analysis equipment and low-light-level video equipment.

Sales Activity: Their R & D services and their products are sold to a wide variety of scientific and photonic organizations.

Research Activity: ITRES is collaborating with the University of Arizona on development of an imager spectrograph instrument to fly on the space shuttle. It is also developing a compact, low-cost airborne multispectral scanner for general remote sensing application.

K

King Byte Inc.

106 Cochrane Crescent
Cochrane, Alberta
T01 0W0
(403) 932-4607

Contact: Lonnie Nunweller, President

Company Founded: 1982

Products and Services: King Byte Inc. manufactures a custom-designed analog-to-digital converter board which has full 13-bit resolution on 32 channels. It is designed for the most demanding tasks, and works with any computers that employ RS-232 communications.

King Byte's software/hardware systems currently in use in the oil and gas industry include: the "Gasman" compressor station hardware/software, which gives gas flow readings from many sites (flow control and alarm modules are also available); "Spotman" portable gas flow monitors, which have ERCB approval; and the "Scanwell" oilfield production monitoring software, developed for A. Comeau & Associates Ltd.

The company's software base is the multitasking "C" language. The company will consider almost any hardware/software development project.

Sales Activity: The company is selling to the petroleum industry and to natural gas companies.

L

Lakewood Systems Ltd.

Research Centre 200
9258 - 34 A Avenue
Edmonton, Alberta
T6E 5P4
(403) 462-9110

Contact: Dan Hlibka, President

Company Founded: 1978

Products and Services: Lakewood Systems Ltd. designs, manufactures and sells industrial monitoring systems with a focus on environmental, forestry and agricultural monitoring applications. Products include portable datalogging systems, telemetry systems and various instrumentation devices.

Sales Activity: The firm markets its products to municipal utilities, remote agricultural research stations, laboratories, the oil and gas industry, the military and private industry.

Export Activity: The firm has developed a major export market for its products in Southeast Asia and the U.S.

Research Activity: A major R & D effort has produced a compact battery operated data recording system designed for high reliability and accuracy under severe remote operating conditions. Equipped with a three-year battery supply and 10-year data retention capacity, the unit has been shown to operate successfully in a temperature range of -40°C to +55°C.

Intera Technologies Ltd

M

Mega Technical Industries Ltd.

9311 - 35 Avenue
Edmonton, Alberta
T6E 5R5
(403) 450-3022

Contact: Bob Lindsay, President

Company Founded: 1986

Products and Services: The company custom designs and manufactures a wide range of electronic equipment. The major product is BRITEN-UP (tm), a solid state daytime driving light device. Other products include a dual-antennae switching system for broad band two-way radio products. Mega Technical also acts as a manufacturing subcontractor for all stages of electronic manufacturing, including printed circuit boards, construction, assembly and testing.

Mega Technical services radar equipment for the R.C.M.P.

Sales Activity: The products and services are sold to the automotive, communications and oil and gas industries.

Export Activity: The company exports to the United States.

Mobiltex Data Ltd.

4A, 3516 - 26 Street N.E.
Calgary, Alberta
T1Y 4T7
(403) 291-2770

Contact: Dale Poloway
Marketing Manager

Company Founded: 1985

Products and Services: Mobiltex Data Ltd. is engaged in the design and manufacture of industrial mobile data systems and mobile radio signalling products. The company also provides OEM design and manufacturing as well as consulting services in this area.

Mobiltex Mobile Data Systems are used worldwide in demanding environments such as surface mining, gas processing, pipeline, and tar sands operations. Applications include real-time production monitoring, computer-aided dispatch, vehicle location, and remote control and status monitoring. Products provided by Mobiltex include Mobile Data Terminals, Station Controllers, Radio Modems, and Host Computer Operating Systems.

Mobiltex signalling products are utilized primarily in the land mobile radio industry and include ANI encoder/display units, DTMF decoder/page transponders, DTMP encoders, CTCSS encoders/decoders, and paging encoders. These radio system enhancement products are distributed in Canada by ECD Electronic Communication Distributors Inc.

Sales Activity: The company sells to the petroleum, mining and telecommunications industries, as well as to manufacturers, wholesalers, and users.

N

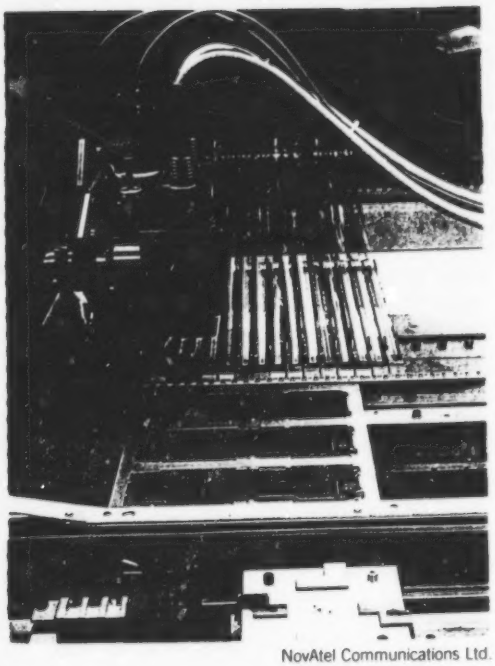
Newco Safety Tel Inc.

1921 - 10 Avenue S.W.
Calgary, Alberta
T3C 0K3
(403) 228-3605

Contact: R.J. Stewart, President

Company Founded: 1986

Products and Services: The company manufactures CSA approved explosion-proof telephones and explosion-proof intercom systems including hydrogen approved equipment (Group B), hydrocarbon gases (Groups C and D), and dust approvals (Groups E, F and G). The telephone apparatus is DOC approved. Newco Safety Tel also sells audio signal devices and provides consulting services for explosion-proof systems.



NovAtel Communications Ltd.

Sales Activity: The company sells to the petroleum and defence industries, as well as resource processors, federal government agencies, other manufacturers, and provincial government agencies.

Export Activity: Marketing has determined that substantial numbers of units are required throughout North America. Interest has also been generated in Australia and the Pacific Rim, South America, the Middle East and Southeast Asia.

Norstar Instruments Ltd.

319 - 2 Avenue S.W.
Calgary, Alberta
T2P 0C5
(403) 262-0800

Contact: Brad Timinski
General Manager

Company Founded: 1984

Product, Services and Specialties: Norstar develops and manufactures Global Positioning Systems (GPS) satellite receivers. The Norstar 1000 is a five channel high precision instrument used for precise positioning and navigating in dynamic and static modes. With a single instrument, accuracies of a few metres are achieved and in a differential mode sub-metre accuracies are standard. Current production employs C/A code.

The company is proceeding with development of other receiver models including a two channel P-code unit, and dual frequency L1 L2 models.

Norstar receivers have imbedded processing software. Post processing programs are available.

Norstar Instruments is a wholly owned subsidiary of Nortech Surveys (Canada) Ltd.

Sales Activity: Production started in 1987, and receivers have been sold to the surveying industry, government agencies and the armed forces.

Export Activity: Agents have been established in 26 countries. Export customers include the U.S. Air Force.

Northern Telecom Canada

P.O. Box 1974
Edmonton, Alberta
T5J 2P4
(403) 441-3100

Contact: J. Hillier, Vice President

Company Founded: Calgary Business Products Division, 1981
Calgary Digital Switching Plant, 1975

Northern Telecom Canada Limited is Canada's leading telecommunications equipment designer and manufacturer, with 24 plants and 14 research centres in nine provinces. The company's Alberta locations consist of two plants in Calgary and corporate offices in Edmonton.

Products and Services: The Calgary business products division manufactures sophisticated small business telephone systems for North American and export markets. The division designs, engineers, manufactures and markets the Vantage family of small business telephone sets and systems. Features of the unit include: direct access intercom, handsfree operation, automatic redial, speed calling, call forwarding and three-way calling.

The digital switching plant in Calgary manufactures the company's DMS (digital multiplex system) family of switches. The DMS-100 is a large local telephone switch designed to serve from 3,000 to 100,000 lines of local telephone subscribers. The DMS-200 is a toll switch for long distance calls with 300 to 60,000 circuit capacity.

Sales Activity: The business products are sold to small and medium sized businesses either through distributors or telephone companies. The digital switching products are sold to more than 90 telephone companies in 30 countries.

Export Activity: The business products are marketed worldwide with approximately 40% going to export markets. The digital switching products have been installed throughout North America, the Caribbean, Europe and the Pacific Rim.

Research Activity: Northern Telecom Canada Limited's research subsidiary is Bell Northern Research Ltd., Canada's largest private R & D concern.

NovAtel Communications Ltd.

1020 - 64 Avenue N.E.
Calgary, Alberta
T2E 7V8
(403) 295-4500

Contact: David McDowell
Vice President
Sales and Marketing

Company Founded: 1983

Products and Services: NovAtel is jointly owned by Nova Corp. and Alberta Government Telephones Ltd. The company is a worldwide leader in the research, development, manufacturing and marketing of cellular radio telephones, communications systems and services. NovAtel's decentralized cellular switching system is unique in the industry, offering the most cost effective architecture for smaller city, corridor and rural markets. Its family of cellular mobile and portable telephones and peripherals offers a wide range of configuration and feature options, available for operation on major systems worldwide, including 800/900 MHZ and 400/450 MHZ bands. Through the Canada Awards for Business Excellence, NovAtel has won a gold award in the Industrial Design category for its 8300/9300 series of cellular telephones.

Sales Activity: NovAtel's products are sold to telephone companies, radio common carriers, automotive manufacturers, and authorized dealers and agents across North America and worldwide.

Export Activity: U.S. Cellular Phone distribution is through NovAtel/Carcom Inc. in Fort Worth, Texas; in the U.K. through the Carphone Group in Bath. U.S. System sales are through NovAtel Communications Inc. in Atlanta, Georgia. International Sales (Australia, New Zealand, China, etc.) are through Calgary Headquarters.

Research Activity: In the R & D labs in Calgary, capability ranges from VLSI-IC design, (CMOS, Bipolar) high frequency RF circuit and component design, digital communications, switching, software and mechanical/industrial design.

P

Palco Telecom Ltd.

7825 Flint Road S.E.
Calgary, Alberta
T2H 1G3
(403) 255-4481

Contact: Barry L. McCallum
Manager, C.S.D.

Company Founded: 1967

Products and Services: Palco has grown into a leading North American supplier of new and refurbished telephone equipment. Palco also offers design, engineering and production services related to a wide range of telecommunications station products.

Sales Activity: The company provides telecommunications services and products to telephone companies and interconnect companies across Canada and the United States.

Export Activity: Palco has subsidiaries in Toronto, Ontario; Shelbyville, Indiana; Huntsville, Alabama; Nashville, Tennessee; and Redlands, California.

Research Activity: The firm's current research is aimed at enhancing a chemical process for vapor polishing plastic components, and is also involved in printed circuit board test and repair.

Pelorus Aviation Supplies Canada Ltd.

#202, 575 Palmer Road N.E.
Calgary, Alberta
T2E 7G4
(403) 250-9377

Contact: Ed Fitzhenry, President

Company Founded: 1982

Products and Services: Pelorus manufactures and installs electronic distance measuring equipment (DME) for airports. The company also produces the Automated Weather Observation and Reporting System (AWORS), which takes continuous observations of relevant weather data and transmits them to incoming aircraft using a microchip voice processor, for use at remote, untended airports.

Sales Activity: Major clients are Canadian provincial and municipal governments which operate airports.

Export Activity: The company exports to Europe and the Pacific Rim, and the U.S. It has a branch office in Toronto, and a subsidiary in Tucson, Arizona.

Research Activity: Pelorus and the Alberta Research Council are developing a microwave landing system (MLS) avionics receiver. It will be part of a new microwave system replacing the current instrumental system in airports and aircrafts around the world.

PLD Systems Ltd.

Suite 1100
1122 - 4 Street S.W.
Calgary, Alberta
T2R 1M1
(403) 237-6960

Contact: Jack Valgardson
Acting General Manager

Company Founded: 1986

Products and Services: The company manufactures and markets an Automatic Vehicle Tracking System, which can be applied to any kind of fleet operation that can be equipped with radio communications equipment. Typical urban applications include transit,

police, taxi, courier and civic administration vehicle tracking. Typical industrial applications are in mines, ports and oilfields.

Sales Activity: PLD Systems Ltd. markets to the transportation and mining industries, as well as the provincial government, and fleet operators.

S

Sherrex Systems Ltd.
4196 - 93 Street
Edmonton, Alberta
T6E 5P5

Contact: Wayne Sherrard, P. Eng.

Company Founded: 1980

Products and Services: Sherrex has developed and manufactured more than 50 high technology products. The company manufactures Supervisory Control and Data Acquisition (SCADA) systems, and other products used by the industrial sector to control and monitor processes, buildings and computers. Sherrex also provides fibre optic communications products and industrial fibre optic systems including design, construction and installation services.

Sales Activity: The products and services are sold to various industries. Several products such as EPROM Programmers are sold across North America through distributors and representatives.

Export Activity: Sherrex sells to the U.S. and Australia.

Research Activity: The company's major research thrust is in development of microprocessor-based remote monitoring and control devices.

T

Teletronic Communications Ltd.
15107 - 123 Avenue
Edmonton, Alberta
T5V 1J7
(403) 451-6799

Contact: R.A. de la Salle, President

Company Founded: 1983

Products and Services: Teletronic Communications Ltd., occupies a leading position in the field of broadband Integrated Services Digital Network (ISDN) technology. The company has developed a system to deliver simultaneous two-way voice, video and data over coaxial cable or optical fibre.

Sales/Export Activity: Teletronic's system is scheduled to be tested in Great Britain in a 5,000 home hook-up. The firm's ability to apply telephone engineering techniques and standards to the cable T.V. industry and computer distribution technology attracted the attention of communications interests in Great Britain, where both TV signals and local telephone traffic can be carried by a single broadband licensee along with data communication and services. Initial North American market penetration is expected in intelligent buildings, campuses or closed circuit networks.

Research Activity: Teletronic is an ongoing researcher and developer of integrated video and data multiplexors including LAN & MAN systems that provide voice and video as well.

Trison Instruments Ltd.
485 Sioux Road
Sherwood Park, Alberta
T8A 4H2
(403) 467-1644

Contact: Leo Tachuk, President

Products and Services: This company develops, designs and manufactures products including a program control unit for use in programming school time clocks, runway lighting control equipment, and a party line converter which gives subscribers privacy and allows them to use features not previously available such as extension phones, answering machines, designer phones and computer modems.

Sales Activity: Trison has sold its program control unit to Edwards of Canada, its runway lighting control equipment to 40 major airports in Canada and the party line converters are targeted at the 8 million subscribers in North America.

Export Activity: The company exports to the United States.

Tsiger Planar Technologies Inc.
4254 - 93 Street
Edmonton, Alberta
T6E 5K6
(403) 450-2358

Contact: Edward Sinclair, President

Company Founded: 1985

Products and Services: Tsiger manufactures flat, thin antennas for satellite reception. The company has developed a flat satellite ground receiver which is just emerging from the technology transfer stages. The receiver is a foldable, portable, mini-earth station. Custom engineered designs can be manufactured.

Sales Activity: One model is intended for the consumer market and other models will be custom engineered and built for telecommunications, aerospace, business, and defence purposes, and will be a replacement for existing parabolic antennae.

Tycor Electronic Products Ltd.

6107 - 6 Street S.E.
Calgary, Alberta
T2H 1L9
(403) 259-3200

Contact: Will Frey, President

Company Founded: 1976

Products and Services: Tycor manufactures power conditioning equipment — AC Powerline Filters, UPS Battery Backup, and Regulators. The AC Powerline Filter incorporates finely tuned circuitry which virtually removes all normal and common mode noise, EMI, RFI, and protects against massive surges caused by lightning and switching power grids. Tycor offers computer grade power from an AC source for every type of microprocessor application worldwide, which also eliminates the necessity for dedicated lines. Tycor Regulators and UPS Battery Backups will supply regulated power as well as blackout protection where needed. Typical applications include: computers, CAD/CAM and robotics, point-of-sale terminals, programmable logic controllers, and military equipment.

Sales Activity: The Tycor (tm) power line conditioning products are sold to the OEM's, third party groups, and distributors in the computer, electrical, and electronic industries and also to educational, government, and defence organizations.

Export Activity: Tycor products are marketed internationally through distributors. The company exports to the U.S., Australia, New Zealand, Hong Kong, and Singapore. It is presently negotiating with companies for distribution in India, Korea and the Philippines.

Research Activity: The firm's engineering, research and development department continuously tests and upgrades products to ensure they meet and exceed military and industry specifications and are compatible with all equipment loads.

V

Valmet-Sentrol Limited

1, 6325 - 12 Street S.E.
Calgary, Alberta
T2H 2K1
(403) 253-8848

Contact: Larry Stack
Marketing Manager

Company Founded: 1973 as S.A. Engineering, 1981 as Sentrol Systems Ltd. (acquisition), and 1987 as Valmet-Sentrol Ltd. (acquisition).

Products and Services: SCADA Products Division, Calgary, Alberta Forest Products Division, Toronto, Ontario. Belongs to the Valmet Automation Group of Companies, Helsinki, Finland. Valmet-Sentrol is one of the largest Canadian suppliers of computer-based Supervisory Control and Data Acquisition systems to oil and gas pipelines.

Sales Activity: The company markets its SCADA products to the oil, gas, water and waste water industries on a worldwide basis.

Export Activity: Valmet-Sentrol SCADA Products Division has expanded into the U.S. market by acquiring a SCADA operation in New Orleans, Louisiana and markets its products in Europe, South America, and the Pacific Rim countries through divisions and subsidiaries of the Valmet Automation Group of Companies.

W

Wellsdale Research Ltd.

Main Post Office
P.O. Box 1167
Edmonton, Alberta
T5J 3M4
(403) 421-8282

Contact: Robert J. Grauman
President

Company Founded: 1979

Products and Services: Services and repairs weather radar meteorological instruments and electronic systems. Manufactures remote data acquisition equipment, atmospheric communications equipment, lightning detection and suppression equipment, hydrological equipment, photovoltaic power systems, and meteorological equipment.

Sales Activity: The products and services are sold to the oil and mining industries and to the government.

Westronic Inc.

4525 Manilla Road S.E.
Calgary, Alberta
T2G 4B6
(403) 243-3335

Contact: T. Graham, Vice President

Company Founded: 1980

Products and Services: Westronic Inc. is a leader in the design, manufacture and marketing of Supervisory Control and Data Acquisition (SCADA) Remote Terminal Units (RTU's), telemetry equipment and systems. One of its major product lines is the microcomputer-based RTU's for energy management and control. Specialized units are also available for communication network management systems.

Sales Activity: The products are sold to the oil and gas, telecommunications, and electric utility industries.

Export Activity: Export accounts for 95% of Westronic's business. The company has penetrated markets in the United States, the United Kingdom, Australia and Malaysia, and has won awards for its export achievements.

Williams Electronics Ltd.

11619 - 147 Street
Edmonton, Alberta
T5M 1W3
(403) 453-2377

Contact: Ken Polanski, President

Company Founded: 1970

Products and Services: The company manufactures facsimile mobile interface devices, (FMID[tm]). The FMID permits Group III digital facsimile machines to send hard copy information, charts, maps and graphs via two-way radio/radio telephone in either simplex, half duplex or full duplex operation. The complete communications package (Radio-FMID-FAX) is a user friendly system that provides the rapid transfer of hard copy information to and from remote sites.

Sales Activity: The products and services are sold to logging, mining, oil and gas, and transportation industries and to government.

Research Activity: R & D activities are performed by the affiliated company, Polanski Electronics Ltd.

Willowglen Systems Ltd.

1, 1235 - 64 Avenue S.E.
Calgary, Alberta
T2H 2J7
(403) 253-3051

Contact: Malcolm Milne
Vice President

Company Founded: 1974

Products and Services: Willowglen is the only international company which specializes totally in the design, engineering and supply of SCADA (Supervisory Control and Data Acquisition) systems. The firm supplies products for its own systems and for major industrial products engineered by others.

Sales Activity: Willowglen systems are sold to the electric power, oil and gas, water, transportation, telecommunications, and security and energy management industries worldwide.

Export Activity: The company's international contracts have included supplying an automation system to the Metropolitan Water District of Southern California, a control and monitoring system for 3,000 Singapore high-rises, and the automation system of sour gas production for a Soviet gas field. Willowglen has subsidiaries in Los Angeles and Singapore.

Research Activity: Research and development focus on a new generation of SCADA systems and on the potential for spin-off products in other markets.